

CURRICULUM VITAE

January, 2008

I. PERSONAL

Paul Ginoux

Current Appointment: Physical Scientist Level 4
National Oceanic and Atmospheric Administration
Geophysical Fluid Dynamics Laboratory
Forrestal Campus – Route 1
201 Forrestal Road
Princeton, NJ-08542-0308

Citizenship: USA

II. HIGHER EDUCATION

Free University of Brussels, Belgium, Ph.D. Applied Sciences, 1997.
Free University of Brussels, Belgium, M.S., Civil Engineering, 1988.
Free University of Brussels, Belgium, B.S., Civil Engineering, 1986.

III. EXPERIENCE

Academic

2004-present, Research Physical Scientist, NOAA GFDL, Princeton, NJ
2003-2004, Project Scientist I, UCAR/NOAA GFDL, Princeton, NJ
2001-2003, Assistant Research Scientist, GEST/NASA GSFC, MD
1998-2001, Post doctoral Fellow at NASA GSFC, MD
1992-1997, Scientist visitor, National Center for Atmospheric Research, CO
1991-1992, Civil Engineer, Belgium Institute for Space Aeronomy, Belgium

Military (mandatory draft)

1989-1990, Civil Engineer, Royal Military Academy, Belgium

IV PUBLICATIONS

Journal Articles

1. Dubovik, O., T. Lapyonok, Y. J. Kaufman, M. Chin, P. Ginoux, and A. Sinyuk, 2008, Retrieving global aerosol sources from satellite using inverse modeling, *Atmos. Chem. Phys.*, 8, 209-250.
2. Li, F., P. Ginoux, and V. Ramaswamy, 2008: Distribution, transport, and deposition of mineral dust in the Southern Ocean and Antarctica: Contribution of major sources, *J. Geophys. Res.*, 113, D10207, doi:10.1029/2007JD009190.
3. Chin, M., T. Diehl, P. Ginoux, and W. Malm, 2007, Intercontinental transport of pollution and dust aerosols: implications for regional air quality, *Atmos. Chem. Phys.*, 7(21), 5501-5517.
4. Ming, Y., V. Ramaswamy, L. J. Donner, V. T. J. Phillips, S. A. Klein, P. A. Ginoux, and L. W. Horowitz, 2007, Modeling the interactions between aerosols and liquid water clouds with a self-consistent scheme in a general circulation model, *J. Atmos. Sci.*, 64(4), 1189-1209.
5. Rotstayn, L., W. Cai, M. R. Dix, G. D. Farquhar, Y. Feng, P. Ginoux, M. Herzog, A. Ito, J. Penner, M. L. Roderick, and M. Wang, Have Australian rainfall and cloudiness increased due to the remote effects of Asian anthropogenic aerosols?, *J. Geophys. Res.*, 112, D09202, doi:10.1029/2006JD007712.
6. Textor, C., M. Schulz, s. Guibert, S. Kinne, V. Balkanski, S. Bauer, T. Berntsen, T. Berglen, O. Boucher, and P. Ginoux, et al., 2007: The effect of harmonized emissions on aerosol properties in global models - an AeroCom experiment, *Atmos. Chemistry and Physics*, 7, 4489-4501.
7. Weaver, C., M. Chin, P. Ginoux, O. Dubovik, D. Flintner, A. Zia, L. Remer, B. Holben, and W. Gregg, 2007, Assimilation of MODIS radiances in a global aerosol transport model, *J. Atm. Sci.*, 64(3), 808-827..
8. Cakmur, R. V. , R. L. Miller, J. Perlwitz, I. V. Geogdzhayev , P. Ginoux, D. Koch, K. E. Kohfeld, I. Tegen, and C. S. Zender, 2006: Constraining the magnitude of the global dust cycle by minimizing the difference between a model and observations. *Journal of Geophysical Research*, 111, D06207, doi:10.1029/2005JD005791.
9. Delworth, T. L., A. Rosati, R. J. Stouffer, K. W. Dixon, J. Dunne, K. Findell, P. Ginoux, A. Gnanadesikan, C. T. Gordon, S. M. Griffies, R. Gudgel, M. J. Harrison, I. M. Held, R. S. Hemler, L. W. Horowitz, S. A. Klein, T. R. Knutson, S-J. Lin, P. C. D. Milly, V. Ramaswamy, M. D. Schwarzkopf, J. J. Sirutis, W. F. Stern, M. J. Spelman, M. Winton, A. T. Wittenberg, B. Wyman, et al., 2006: GFDL's CM2 Global Coupled Climate Models. Part I: Formulation and simulation characteristics. *Journal of Climate*, 19(5), 643-674.
10. Dentener, F., S. Kinne, T. Bond, O. Boucher, J. Cofala, S. Generoso, P. Ginoux, S. Gong, J. J. Hoelzemann, A. Ito, L. Marelli, J. E. Penner, J.-P. Putaud, C. Textor, M. Schulz, G. R. van der Werf, J. Wilson , 2006: Emissions of primary aerosol and precursor gases in the years 2000 and 1750, prescribed data-sets for AeroCom. *Atmospheric Chemistry Physics Discussions*, 6, 2703-2763.
11. Ginoux, P., L. W. Horowitz, V. Ramaswamy, I. V. Geogdzhayev, B. N. Holben, G. Stenchikov, and X. Tie, 2006, Evaluation of Aerosol Distribution and Optical Depth in the GFDL Coupled Model CM2.1 for Present Climate, *J. Geophys. Res.*, 111, D22210, doi:10.1029/2005JD006707.
12. Kinne, S., M. Schulz, C. Textor, S. Guibert, Y. Balkanski, S. E. Bauer, P. Ginoux, M. Herzog, and L. Horowitz, et al., 2006: An AeroCom initial assessment - optical properties in aerosol component modules of global models. *Atmospheric Chemistry and Physics*, 6, 1815-1834.
13. Miller, R. L., R. V. Cakmur, J. Perlwitz, I. V. Geogdzhayev, P. Ginoux, D. Koch, K. E. Kohfeld, C. Prigent, R. Ruedy, G. A. Schmidt, and I. Tegen, 2006: Mineral dust aerosols in the NASA Goddard Institute for Space Sciences ModelE atmospheric general circulation model. *Journal of Geophysical Research*, 111, D06208, 10.1029/2005JD005796.
14. Textor, C., M. Schulz, S. Guibert, S. Kinne, Y. Balkanski, S. Bauer, T. Berglen, P. Ginoux, and L. Horowitz, et al., 2006: Analysis and quantification of the diversities of aerosol life cycles within AeroCom. *Atmospheric Chemistry and Physics*, 6, 1777-1813.
15. Washington, R., M. C. Todd, G. Lizcano, I. Tegen, C. Flamant, I. Koren, P. Ginoux, s. Engelstaedter, C. S. Bristow, C. S. Zender, A. S. Goudie, A. Warren, and J. M. Prospero, 2006: Links between topography, wind, deflation, lakes and dust: The case of the Bodélé Depression, Chad. *Geophysical Research Letters*, 33, L09401, doi:10.1029/2006GL025827.

16. Kaufman, Y. J., I. Koren, L. A. Remer, D. Tanré, P. Ginoux, and S. Fan, 2005: Dust transport and deposition observed from the Terra-Moderate Resolution Imaging Spectroradiometer (MODIS) spacecraft over the Atlantic Ocean. *Journal of Geophysical Research*, 110, D10S12, doi:10.1029/2003JD004436.
17. Kinne, S., M. Schulz, C. Textor, S. Guibert, Y. Balkanski, S. E. Bauer, T. Berntsen, T. F. Berglen, O. Boucher, M. Chin, W. Collins, F. Dentener, T. Diehl, R. Easter, J. Feichter, D. Fillmore, S. Ghan, P. Ginoux, S. Gong, A. Grini, J. Hendricks, M. Herzog, L. Horowitz, I. Isaksen, T. Iversen, A. Kirkevåg, S. Kloster, D. Koch, J. E. Kristjansson, M. Krol, A. Lauer, J. F. Lamarque, G. Lesins, X. Liu, U. Lohmann, V. Montanaro, G. Myhre, J. Penner, G. Pitari, S. Reddy, Ø. Seland, P. Stier, T. Takemura, X. Tie, 2005: An AeroCom initial assessment - optical properties in aerosol component modules of global models. *Atmospheric Chemistry and Physics Discussions*, 5, 8285-8330.
18. Lamarque, J.-F., J. T. Kiehl, P. G. Hess, W. D. Collins, L. K. Emmons, P. Ginoux, C. Luo, and X. X. Tie, 2005: Response of a coupled chemistry-climate model to changes in aerosol emissions: Global impact on the hydrological cycle and the tropospheric burdens of OH, ozone, and NO_x. *Geophysical Research Letters*, 32, L16809, doi: 10.1029/2005GL023419.
19. Ming, Y., V. Ramaswamy, P. A. Ginoux, and L. H. Horowitz, 2005: Direct radiative forcing of anthropogenic organic aerosol. *Journal of Geophysical Research*, 110, D20208, doi:10.1029/2004JD005573.
20. Ming, Yi, V. Ramaswamy, P. A. Ginoux, L. W. Horowitz, and L. M. Russell, 2005: Geophysical Fluid Dynamics Laboratory general circulation model investigation of the indirect radiative effects of anthropogenic sulfate aerosol. *Journal of Geophysical Research*, 110, D22206, doi:10.1029/2005JD006161.
21. Textor, C., M. Schulz, S. Guibert, S. Kinne, Y. Balkanski, S. Bauer, T. Berntsen, T. Berglen, O. Boucher, M. Chin, F. Dentener, T. Diehl, R. Easter, H. Feichter, D. Fillmore, S. Ghan, P. Ginoux, S. Gong, A. Grini, J. Hendricks, L. Horowitz, P. Huang, I. Isaksen, T. Iversen, S. Kloster, D. Koch, A. Kirkevåg, J. E. Kristjansson, M. Krol, A. Lauer, J. F. Lemarque, X. Liu, V. Montanaro, G. Myhre, J. Penner, G. Pitari, S. Reddy, Ø. Seland, P. Stier, T. Takemura, and X. Tie, 2005: Analysis and quantification of the diversities of aerosol life cycles within AeroCom. *Atmospheric Chemistry and Physics Discussions*, 5, 8331-8420.
22. Tie, X., S. Madronich, S. Walters, D. P. Edwards, P. Ginoux, N. Mahowald, R-Y. Zhang, C. Lou, and G. Brasseur, 2005: Assessment of the global impact of aerosols on tropospheric oxidants. *Journal of Geophysical Research*, 110, D03204, doi:10.1029/2004JD005359.
23. Barnum, B. H., N. S. Winstead, J. Wesely, A. Hakola, P. R. Colarco, O. B. Toon, P. Ginoux, G. Brooks, L. Hasselbarth, and B. Toth, 2004: Forecasting dust storms using the CARMA-dust model and MM5 weather data. *Environmental Modelling and Software*, 19(2), 129-140.
24. Chin, M., A. Chu, R. Levy, L. Remer, Y. Kaufman, B. Holben, T. Eck, P. Ginoux, and Q. Gao, 2004: Aerosol distribution in the Northern Hemisphere during ACE-Asia: Results from global model, satellite observations, and Sun photometer measurements. *Journal of Geophysical Research*, 109, D23S90, doi:10.1029/2004JD004829.
25. Ginoux, P., J. M. Prospero, O. Torres, and M. Chin, 2004: Long-term simulation of global dust distribution with the GOCART model: Correlation with North Atlantic Oscillation. *Environmental Modelling and Software*, 19(2), 113-128.
26. Ansmann, A., J. Bösenberg, and P. Ginoux, et al., 2003: Long-range transport of Saharan dust to northern Europe: The 11-16 October 2001 outbreak observed with EARLINET. *Journal of Geophysical Research*, 108(D24), 4783, doi: 10.1029/2003/JD003757.
27. Chin, M., P. Ginoux, R. Lucchesi, B. Huebert, R. Weber, T. Anderson, S. Masonis, B. Blomquist, A. Bandy, D. Thornton, 2003: A global aerosol model forecast for the ACE-Asia field experiment. *Journal of Geophysical Research*, 108(D23), 8654, doi:10.1029/2003JD003642.
28. Erickson D. J., J. L. Hernandez, P. Ginoux, W. W. Gregg, C. McClain, J. Christian, 2003: Atmospheric iron delivery and surface ocean biological activity in the Southern Ocean and Patagonian region. *Geophysical Research Letters*, 30(12), 1609, doi:10.1029/2003GL017241.
29. Ginoux, P., 2003: Effects of nonsphericity on mineral dust modeling. *Journal of Geophysical Research*, 108(D2), 4052, doi:10.1029/2002JD002516.

30. Ginoux, P., and O. Torres, 2003: Empirical TOMS index for dust aerosol: Applications to model validation and source characterization. *Journal of Geophysical Research*, 108(D17), 4534, doi:10.1029/2003JD003470.
31. Gregg, W. W., M. E. Conkright, P. Ginoux, J. E. O'Reilly, N. W. Casey, 2003: Ocean primary production and climate: Global decadal changes. *Geophysical Research Letters*, 30(15), 1809, doi:10.1029/2003GL016889.
32. Gregg, W. W., P. Ginoux, P. S. Schopf, and N. W. Casey, 2003: Phytoplankton and iron: validation of a global three-dimensional ocean biogeochemical model. *Deep-Sea Research II*, 50, 3143-3169.
33. Grousset, F. E., P. Ginoux, A. Bory, and P. E. Biscaye, 2003: Case study of a Chinese dust plume reaching the French Alps. *Geophysical Research Letters*, 30(6), 1277, doi:10.1029/2002GL016833.
34. Kinne, S., U. Lohmann, and P. Ginoux, et al., 2003: Monthly averages of aerosol properties: a global comparison among models, satellite data, and AERONET ground data. *Journal of Geophysical Research*, 108(D20), 4634, doi:10.1029/2001JD001253.
35. Martin, R. V. , D. J. Jacob, R. M. Yantosca, M. Chin, and P. Ginoux, 2003: Global and regional decreases in tropospheric oxidants from photochemical effects of aerosols. *Journal of Geophysical Research*, 108(D3), 4097, doi: 10.1029/2002JD002622.
36. Weaver, C. J., J. Joiner, and P. Ginoux, 2003: Mineral aerosol contamination of TIROS Operational Vertical Sounder (TOVS) temperature and moisture retrievals. *Journal of Geophysical Research*, 108(D8), 4246, doi:10.1029/2002JD002571.
37. Chin, M., P. Ginoux, S. Kinne, O. Torres, B. N. Holben, B. N. Duncan, R. V. Martin, J. A. Logan, A. Higurashi, and T. Nakajima, 2002: Tropospheric aerosol optical thickness from the GOCART model and comparisons with satellite and Sun photometer measurements. *Journal of the Atmospheric Sciences*, 59(3), 461-483.
38. Penner, J. E., S. Y. Zhang, M. Chin, C. C. Chuang, J. Feichter, Y. Feng, I. V. Geogdzhayev, P. Ginoux, M. Herzog, A. Higurashi, D. Koch, C. Land, U. Lohmann, M. Mishchenko, T. Nakajima, G. Pitari, B. Soden, I. Tegen, and L. Stowe, 2002: A comparison of model- and satellite-derived aerosol optical depth and reflectivity. *Journal of the Atmospheric Sciences*, 59(3), 441-460.
39. Prospero, J. M., P. Ginoux, O. Torres, S. E. Nicholson, and T. E. Gill, 2002: Environmental characterization of global sources of atmospheric soil dust identified with the NIMBUS 7 Total Ozone Mapping Spectrometer (TOMS) absorbing aerosol product. *Reviews of Geophysics*, 40(1), 1002, doi:10.1029/2000RG000095.
40. Torres, O., P. K. Bhartia, J. R. Herman, A. Sinyuk, P. Ginoux, and B. Holben, 2002: A long-term record of aerosol optical depth from TOMS observations and comparison to AERONET measurements. *Journal of the Atmospheric Sciences*, 59(3), 398-413.
41. Weaver, C. J., P. Ginoux, N. C. Hsu, M-D Chou, and J. Joiner, 2002: Radiative forcing of Saharan dust: GOCART model simulations compared with ERBE data. *Journal of the Atmospheric Sciences*, 59(3), 736-747.
42. Ginoux, P., M. Chin, I. Tegen, J. M. Prospero, B. Holben, O. Dubovik, and S-J. Lin, 2001: Sources and distributions of dust aerosols simulated with the GOCART model. *Journal of Geophysical Research*, 106 (D17), 20,255-20,273.
43. Greenberg, J. P., A. Guenther, S. Madronich, W. Baugh, P. Ginoux, A. Druilhet, R. Delmas, and C. Delon, Biogenic VOC emissions in Central Africa during EXPRESSO biomass burning season, *J. Geophys. Res.*, 104, 30,365-30671, 1999.
44. Delmas et al., Experiment for Regional Sources and Sinks of Oxidants (EXPRESSO): An overview, *J. Geophys. Res.*, 104, 30,609-30,624, 1999.
45. Hauglustaine, D., A. S. Madronich, B. A. Ridley, S. J. Flocke, C. A. Cantrell, F. L. Eisele, R. E. Shetter, D. J. Tanner, P. Ginoux, and E. L. Atlas, Photochemistry and budget of ozone during the Mauna Loa Observatory Photochemistry Experiment (MLOPEX 2), *J. Geophys. Res.*, 104, 20,275-30,307, 1999.

Book Chapters

1. *Atmospheric Chemistry and Global Change*, Edited by G. P. Brasseur, J. J. Orlando and G. S. Tyndall, Oxford University Press, New York, 1999.

2. *Remote Sensing and Climate Modeling: Synergies and Limitations*, Edited by M. Beniston and M. M. Verstraete, Kluwer Academic Publishers, Netherlands, 2001.
3. *Emissions of Chemical Species and Aerosol into the Atmosphere*, Edited by C. Granier, P. Artaxo, and C. Reeves, Kluwer Academic Publishers, Netherlands, 2004.

Assessment Reports

1. Report of the Intergovernmental Panel on Climate Change (IPCC), Chapter 5. Aerosols, their direct and indirect effects, Cambridge University Press, 2001.
2. A report of findings and recommendations on the impacts of aviation on climate change, FAA, 2006.

Other publications

Ginoux, P., Development of a telescopic atmospheric chemistry transport model, and interpretation of the results of the MLOPEX field campaign, Free University of Brussels, 303 pp., 1997. (Ph. D. Thesis in French).

Baudouin, Y., and P. Ginoux, Techniques CAD/CAM, *Report MA513-22*, Royal Military School, Belgium, 1990.

Ginoux, P., Y. Baudoin, and E. Ponselet, Criteres de qualifications en vibrations de materiels electro-acoustiques, *Revue de l'Ecole Polytechnique* (Journal of the Royal Military School of Belgium, in French), 3, 4-14, 1989.

V. PROFESSIONAL

Funded proposals

- 2007-2008: NASA GLORY Science team: P Ginoux, \$35k/yr
2005-2007: NASA NRA NN-H-04-Z-YS-003-N: Understanding the Mechanisms and Effects of Ice Nucleation in Tropical Cyclone, PI: P. Ginoux, \$35k/yr
2001-2003: NASA NRA 00-OES-09: Variability of Aerosols Distribution and optical properties simulated by GOCAT model using TOMS aerosol data and AERONET measurements, PI: P. Ginoux, \$80k /year
2000-2001: NASA NRA 99-OES-04: A 3-D model analysis of satellite and ACE-Asia data, NASA, PI: M. Chin, \$100k/year (\$8k/yr for Co-I P. Ginoux)
2000-2001: NASA NRA 99-OES-04: The interactions between the troposphere and the stratosphere: The impact of climate change, PI: M. Schoeberl, 700K/year (\$8k/yr for Co-I P. Ginoux)

Professional and Honorary Organizations

- American Geophysical Union: 1997 to present
TOMS satellite Science Team: 2001-2005
GLORY Advisory Science Team: 2006-2007

Awards

- 2007 DOI and NASA William T. Pecora award: shared as a member of TOMS Science team.
2005 US Department of Commerce Silver medal for Meritorious Federal Service
2005 NASA GSFC Journal citation award for Ginoux et al., *J. Geophys. Res.* 2001
2004 ESI Thompson citation for Fast Moving Front in Geosciences: Ginoux et al., *J. Geophys. Res.*, 2001

Reviews

- Journals:** Geophysical Research Letters, Nature, Journal of Climate, Journal of Applied Meteorology, Journal of Environmental Engineering and Science, Journal of Geophysical Research, Monthly Weather Review, Proceedings of the National Academy of Sciences, Quarterly Journal, Tellus.
- Research proposals:** USA: NASA, NOAA, NSF
Hong Kong: Research Grants Council
Canada: National Research Council
- Panel review:** Laboratoire d'Optique Atmosphérique (Lille, France), review of laboratory for the French government: 2008
NOAA NWS dust forecasting: 2008
IPCC WG1 4AR (US Government review): 2006
NASA research proposals: 2005, 2006
ESSP3 (renamed later CALIPSO) Lidar Algorithms: 2001

Invited Talks

- Third International dust workshop (Leipzig, Germany, 2008), IPSL/CEA (Paris, France, 2008), Yoram Kaufman symposium (MD, 2007), NASA GSFC (MD, 2007), Laboratoire d'Optique Atmosphérique (Lille, France, 2006), GEIA-ACCENT workshop (Paris, France, 2006), AEROCOM-V workshop (VA, 2006), Rutgers University (NJ, 2006), DOE Atmospheric Sciences Program (Washington DC, 2006), Yale University (CT, 2005), NASA GISS (NY, 2005), GEIA Workshop on emission of atmospheric tracers (Paris, France, 2005), Columbia University (NY, 2004), US-India State departments initiative on climate research (New Delhi, 2004), AGU fall meeting (San Francisco, CA, 2004), Second International Workshop on Mineral dust (Paris, France, 2003), ICAR-5 (Lubbock, TX, 2002), IAMAS (Innsbruck, Austria, 2001), AMS annual meeting (Albuquerque, NM, 2001), Miami University (Miami, FL, 2001), First International

Workshop on mineral dust (Boulder, CO, 1999), Second Gentner Symposium on Geoscience (Nazareth, Israel, 1999).

Contributed Talks

Fall AGU 2008 (2), IGAC 2008 (2), AeroCom workshops 2007,2006,2004, Fall AGU 2007 (2), Fall AGU 2003 (6), Fall AGU 2003 (session convener), Fall AGU 2002 (2), IAMAS 2001 (3), Spring AGU 2000 (3), Fall AGU 2000 (3), Spring AGU 1999 (1), Fall AGU 1998 (1), Fall AGU 1997 (1), IUGG 1995 (1), IGAC 1994 (1)

VI. TEACHING

Lectures

Spring 2008: Princeton University AOS 580: Aerosol, Cloud and Climate Change: 24 lectures
Summer 2007: ACCENT Summer School (Ile d'Oleron, France): 2 lectures
2003-2007: Princeton University AOS-527: 2-6 lectures per year as substitute

Supervision

Undergraduate student:

Dmitri Garbuzov (Princeton University): 2007 to 2008

Graduate Student co-supervision or committee member: -

Fuyu Li (Princeton University): 2006 to present

Yan Zhang (Princeton University): 2008 to present

Cynthia Randles (Princeton University): Graduates in 2007

Post-doctoral:

Dilip Ganguli (Princeton University): 2007 – present

Brian Maggi (Princeton University): 2007 – present

Shekar Reddy (Princeton University): 2004 - 2006